

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Piney Creek

Waterbody Segment at a Glance:

County:	Oregon
Nearby Cities:	Alton
Length of Impairment:	0.1 mile
Pollutant:	Chlorine
Source:	Alton Wastewater Treatment Plant (WWTP)



State map showing location of watershed

TMDL Priority Ranking: TMDL Approved 2001

Description of the Problem

Beneficial uses of Piney Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption

Use that is impaired

- Protection of Warm Water Aquatic Life.

Standards that apply

- The specific criteria (standards) for chlorine are found in Missouri's Water Quality Standards, 10 CSR 20-7.031 Table A, page 17. The standard is 0.01 milligrams per liter (mg/L) or parts per million, expressed as total residual chlorine (TRC). Also, the General Criteria in Missouri's Water Quality Standards section (3)(D) state "Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life."

Background Information

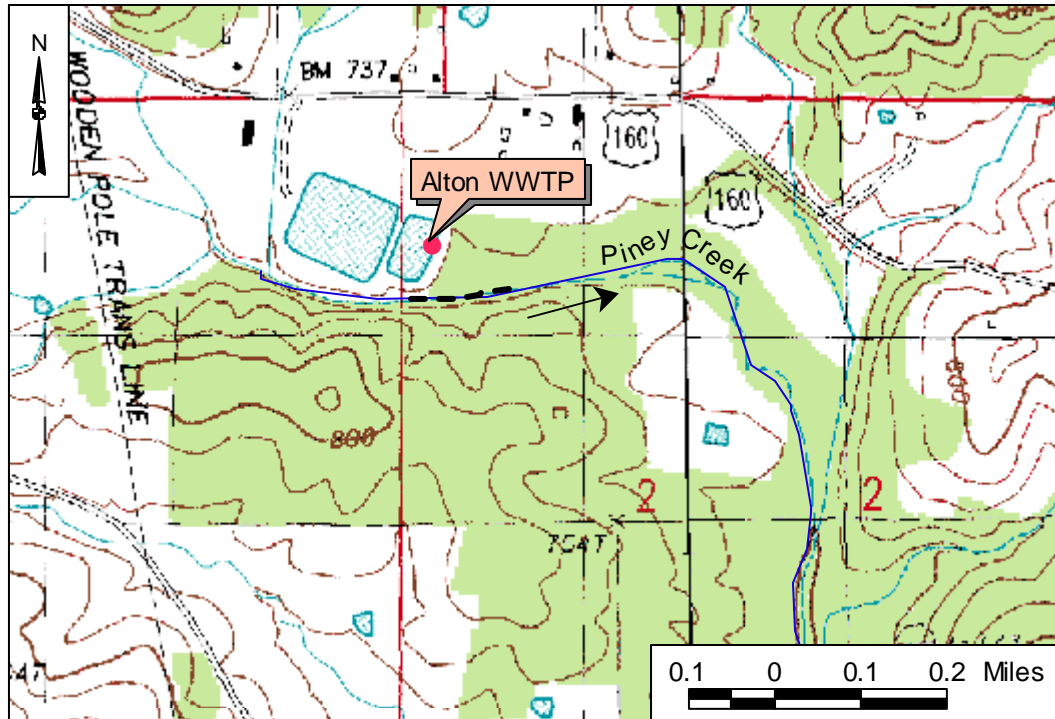
Piney Creek is a "losing" stream. This is a stream where much or all of its flow goes underground and enters the groundwater system. The Water Quality Standards require all discharges to losing streams to be disinfected. The Alton WWTP uses chlorine as a disinfectant to kill bacteria. The effluent discharged from the Alton Wastewater Treatment Plant (WWTP) frequently comprises most or all of the flow in Piney Creek downstream of the wastewater treatment plant. The presence of chlorine in the effluent under these conditions could cause toxicity to aquatic life in the stream.

The Missouri Department of Natural Resources Stream Survey Sampling Report from 1983 noted "reduced fauna just below plant." The 1993 Stream Survey Sampling Report noted "no aquatic life; presence of chlorine" and lists the stream as "non-attainment for any use." A chlorine odor was

also reported. The standards also require dechlorination (a process used to remove chlorine) when a discharge occurs in a stream the size of Piney Creek.

A Total Maximum Daily Load (TMDL) document has been completed for Piney Creek. The TMDL calls for the Alton WWTP permit to be revised to include dechlorination (removal of chlorine) from the effluent. The present permit allows 0.1 mg/L of Total Residual Chlorine (TRC) in the effluent, but this amount is not protective of aquatic life. A limit of 0.01 mg/L will protect aquatic organisms. The U.S. Environmental Protection Agency approved this TMDL Jan. 12, 2001. The permit was modified to include this lower TRC limit. Quarterly monitoring of TRC in the effluent is also being required. For general information on TMDL issues, see the Environmental Protection Agency's TMDL Web page: www.epa.gov/owow/tmdl/. A map of the area is found below.

Alton WWTP Lagoons and Impaired Segment of Piney Creek in Oregon County, Missouri



--- Impaired segment → Direction of flow

For more information call or write:

Missouri Department of Natural Resources

Water Protection Program

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